

**Papio Dam Sites 3C and 1 Preliminary Design
Ad-Hoc Consultant Selection Subcommittee Meeting
December 6, 2005
7:00 p.m.
Agenda**

Papio Dam Sites 3C and 1 Preliminary Design Ad Hoc Consultant Selection Subcommittee:

Tim Fowler, Chairperson
Rich Tesar, Vice-Chairperson
John Conley
Rick Kolowski
Jim Thompson

Alternate Voting Members: Fred Conley
Dick Connealy

Staff Liaison: Paul Woodward *
Marlin Petermann

1. Meeting Called to Order – Chairperson Fowler
2. Quorum Call
3. Adoption of Agenda
4. Proof of Publication of Meeting Notice
5. Review and Recommendation on Professional Services Contract with HDR Engineering – John Engel, HDR; and, Marlin Petermann, and Paul Woodward
6. Adjourn

Memorandum

To: Papio Dam Sites 3C and 1 Preliminary Design Ad-Hoc Consultant Selection Subcommittee

From: Paul Woodward, Water Resources Engineer

Date: November 28, 2005

Re: Contract for Professional Services with HDR Engineering, Inc.

On October 27, 2005, the Ad-Hoc Subcommittee interviewed and selected HDR Engineering, Inc. (HDR) with which to negotiate a professional services contract to provide preliminary design of Papio Dam Sites 3C and 1. Since that time, District staff and representatives from HDR have worked together to prepare the attached agreement, detailed scope, and time and cost estimate for this project.

In summary, HDR will be responsible for providing the following services: project management; public involvement services; agency coordination; hydrologic and hydraulic analysis; preliminary dam designs; transportation, utility and environmental impact evaluations; project economics and funding; land use and recreation planning; and a guide for future project development. According to the schedule, also attached, a final report will be completed within the next 16 months (by April 2007). The total fee for this work was negotiated not to exceed \$621,907, and is broken down between different tasks in the attached fee estimate.

In conclusion, services provided by HDR for this important project would cost a total of \$621,907 and be completed by May 1, 2007.

Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute a professional services contract with HDR Engineering, Inc. for the Papio Dam Sites 3C and 1 Preliminary Design for a maximum fee of \$621,907.00, subject to minor changes deemed necessary by the General Manager and approved as to form by District Legal Council.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD FORM OF AGREEMENT BETWEEN OWNER AND ENGINEER FOR PROFESSIONAL SERVICES

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

As Modified by the Parties Hereto (all changes shown in redline/strike-out format)

This Agreement has been prepared for use with the Standard General Conditions of the Construction Contract (No. C-700, 2002 Edition) of the Engineers Joint Contract Documents Committee. Their provisions are interrelated, and a change in one may necessitate a change in the other. For guidance on the completion and use of this Agreement, see EJCDC User's Guide to the Owner-Engineer Agreement, No. E-001, 2002 Edition.

Issued and Published Jointly by



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**STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR
PROFESSIONAL SERVICES**

THIS IS AN AGREEMENT effective as of _____, _____ ("Effective Date") between
Papio-Missouri River Natural Resources District ("Owner") and
HDR Engineering, Inc. ("Engineer").
Owner intends to Prepare preliminary design for Dam Sites 1 and 3C.

_____ ("Project").

Owner and Engineer agree as follows:

ARTICLE 1 - SERVICES OF ENGINEER

1.01 Scope

A. Engineer shall provide, or cause to be provided, the services set forth herein and in Exhibit A.

ARTICLE 2 - OWNER'S RESPONSIBILITIES

2.01 General

A. Owner shall have the responsibilities set forth herein and in Exhibit B.

B. Owner shall pay Engineer as set forth in Exhibit C.

C. Owner shall be responsible for, and Engineer may rely upon, the accuracy and completeness of all requirements, programs, instructions, reports, data, and other information furnished by Owner to Engineer pursuant to this Agreement. Engineer may use such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement.

ARTICLE 3 - SCHEDULE FOR RENDERING SERVICES

3.01 Commencement

A. Engineer shall begin rendering services as of the Effective Date of the Agreement.

3.02 Time for Completion

A. Engineer shall complete its obligations within a reasonable time. Specific periods of time for rendering services are set forth or specific dates by which services are to be completed are provided in Exhibit A, and are hereby agreed to be reasonable.

B. If, through no fault of Engineer, such periods of time or dates are changed, or the orderly and continuous progress of Engineer's services is impaired, or Engineer's services are delayed or suspended, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.

C. If Owner authorizes changes in the scope, extent, or character of the Project, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.

D. Owner shall make decisions and carry out its other responsibilities in a timely manner so as not to delay the Engineer's performance of its services.

E. If Engineer fails, through its own fault, to complete the performance required in this Agreement within the time set forth, as duly adjusted, then Owner shall be entitled to the recovery of direct damages resulting from such failure.

ARTICLE 4 - INVOICES AND PAYMENTS

4.01 Invoices

A. *Preparation and Submittal of Invoices.* Engineer shall prepare invoices in accordance with its standard invoicing practices and the terms of Exhibit C. Engineer shall submit its invoices to Owner on a monthly basis. Invoices are due and payable within 30 days of receipt.

4.02 Payments

A. *Application to Interest and Principal.* Payment will be credited first to any interest owed to Engineer and then to principal.

B. *Failure to Pay.* If Owner fails to make any payment due Engineer for services and expenses within 30 days after receipt of Engineer's invoice, then:

1. amounts due Engineer will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day; and

2. Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement until Owner has paid in full all amounts due for services, expenses, and other related charges. Owner waives any and all claims against Engineer for any such suspension.

C. *Disputed Invoices.* If Owner contests an invoice, Owner may withhold only that portion so contested, and must pay the undisputed portion. Owner shall promptly notify Engineer of the disputed item and request either clarification or that remedial action be taken. After a disputed item has been settled, Engineer shall include the disputed item on a subsequent regularly scheduled invoice or on a special invoice for the disputed item only.

D. *Legislative Actions.* If after the Effective Date of the Agreement any governmental entity takes a legislative action that imposes taxes, fees, or charges on

Engineer's services or compensation under this Agreement, then the Engineer may invoice such new taxes, fees, or charges as a Reimbursable Expense to which a factor of 1.0 shall be applied. Owner shall pay such invoiced new taxes, fees, and charges; such payment shall be in addition to the compensation to which Engineer is entitled under the terms of Exhibit C.

ARTICLE 5 - OPINIONS OF COST

5.01 Opinions of Probable Construction Cost

A. Engineer's opinions of probable Construction Cost are to be made on the basis of Engineer's experience and qualifications and represent Engineer's best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by Engineer. If Owner wishes greater assurance as to probable Construction Cost, Owner shall employ an independent cost estimator as provided in Exhibit B.

5.02 Reserved

5.03 Opinions of Total Project Costs

A. The services, if any, of Engineer with respect to Total Project Costs shall be limited to assisting the Owner in collating the various cost categories which comprise Total Project Costs. Engineer assumes no responsibility for the accuracy of any opinions of Total Project Costs.

ARTICLE 6 - GENERAL CONSIDERATIONS

6.01 Standards of Performance

A. The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with Engineer's services.

B. Owner shall not be responsible for discovering deficiencies in the technical accuracy of Engineer's

services. Engineer shall correct any such deficiencies in technical accuracy without additional compensation except to the extent such corrective action is directly attributable to deficiencies in Owner-furnished information.

C. Engineer may employ such Consultants as Engineer deems necessary to assist in the performance or furnishing of the services, subject to reasonable, timely, and substantive objections by Owner.

D. Subject to the standard of care set forth in paragraph 6.01.A, Engineer and its Consultants may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.

E. Engineer and Owner shall comply with applicable Laws and Regulations and Owner-mandated standards that Owner has provided to Engineer in writing. This Agreement is based on these requirements as of its Effective Date. Changes to these requirements after the Effective Date of this Agreement may be the basis for modifications to Owner's responsibilities or to Engineer's scope of services, times of performance, and compensation.

G. Engineer shall not be required to sign any documents, no matter by whom requested, that would result in the Engineer having to certify, guarantee, or warrant the existence of conditions whose existence the Engineer cannot ascertain. Owner agrees not to make resolution of any dispute with the Engineer or payment of any amount due to the Engineer in any way contingent upon the Engineer signing any such documents.

H. The General Conditions for any construction contract documents prepared hereunder are to be the "Standard General Conditions of the Construction Contract" as prepared by the Engineers Joint Contract Documents Committee (No. C-700, 2002 Edition) unless both parties mutually agree to use other General Conditions by specific reference in Exhibit J.

I. Engineer shall not at any time supervise, direct, or have control over Contractor's work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by Contractor, for security or safety at the Site, for safety precautions and programs incident to the Contractor's work in progress, nor for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work.

J. Engineer neither guarantees the performance of any contractor nor assumes responsibility for any

contractor's failure to furnish and perform the Work in accordance with the Contract Documents.

K. Engineer shall not be responsible for the acts or omissions of any contractor, subcontractor, or supplier, or of any of their agents or employees or of any other persons (except Engineer's own employees and its Consultants) at the Site or otherwise furnishing or performing any Work; or for any decision made on interpretations or clarifications of the Contract Documents given by Owner without consultation and advice of Engineer.

6.02 Design without Construction Phase Services

A. If Engineer's Basic Services under this Agreement do not include Project observation, or review of the Contractor's performance, or any other Construction Phase services, then (1) Engineer's services under this Agreement shall be deemed complete no later than the end of the Bidding or Negotiating Phase; (2) Engineer shall have no design or shop drawing review obligations during construction; (3) Owner assumes all responsibility for the application and interpretation of the Contract Documents, contract administration, construction observation and review, and all other necessary Construction Phase engineering and professional services; and (4) Owner waives any claims against the Engineer that may be connected in any way thereto.

6.03 Use of Documents

A. All Documents are instruments of service in respect to this Project, and Engineer shall retain an ownership and property interest therein (including the copyright and the right of reuse at the discretion of the Engineer) whether or not the Project is completed. Owner shall not rely in any way on any Document unless it is in printed form, signed or sealed by the Engineer or one of its Consultants.

B. A party may rely that data or information set forth on paper (also known as hard copies) that the party receives from the other party by mail, hand delivery, or facsimile, are the items that the other party intended to send. Files in electronic media format of text, data, graphics, or other types that are furnished by one party to the other are furnished only for convenience, not reliance by the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

C. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform

acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any transmittal errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files.

D. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of such documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the documents' creator.

E. Owner may make and retain copies of Documents for information and reference in connection with use on the Project by Owner. Engineer grants Owner a license to use the Documents on the Project, extensions of the Project, and other projects of Owner, subject to the following limitations: (1) Owner acknowledges that such Documents are not intended or represented to be suitable for use on the Project unless completed by Engineer, or for use or reuse by Owner or others on extensions of the Project or on any other project without written verification or adaptation by Engineer; (2) any such use or reuse, or any modification of the Documents, without written verification, completion, or adaptation by Engineer, as appropriate for the specific purpose intended, will be at Owner's sole risk and without liability or legal exposure to Engineer or to Engineer's Consultants; (3) Owner shall indemnify and hold harmless Engineer and Engineer's Consultants from all claims, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from any use, reuse, or modification without written verification, completion, or adaptation by Engineer; (4) such limited license to Owner shall not create any rights in third parties.

F. If Engineer at Owner's request verifies or adapts the Documents for extensions of the Project or for any other project, then Owner shall compensate Engineer at rates or in an amount to be agreed upon by Owner and Engineer.

6.04 Insurance

A. Engineer shall procure and maintain insurance as set forth in Exhibit G, "Insurance." Engineer shall cause Owner to be listed as an additional insured on any applicable general liability insurance policy carried by Engineer.

B. Owner shall procure and maintain insurance as set forth in Exhibit G, "Insurance." Owner shall cause Engineer and Engineer's Consultants to be listed as additional insureds on any general liability or property

insurance policies carried by Owner which are applicable to the Project.

C. Owner shall require Contractor to purchase and maintain general liability and other insurance in accordance with the requirements of paragraph 5.04 of the "Standard General Conditions of the Construction Contract," (No. C-700, 2002 Edition) as prepared by the Engineers Joint Contract Documents Committee and to cause Engineer and Engineer's Consultants to be listed as additional insureds with respect to such liability and other insurance purchased and maintained by Contractor for the Project.

D. Owner and Engineer shall each deliver to the other certificates of insurance evidencing the coverages indicated in Exhibit G. Such certificates shall be furnished prior to commencement of Engineer's services and at renewals thereafter during the life of the Agreement.

E. All policies of property insurance relating to the Project shall contain provisions to the effect that Engineer's and Engineer's Consultants' interests are covered and that in the event of payment of any loss or damage the insurers will have no rights of recovery against Engineer or its Consultants, or any insureds or additional insureds thereunder.

F. At any time, Owner may request that Engineer or its Consultants, at Owner's sole expense, provide additional insurance coverage, increased limits, or revised deductibles that are more protective than those specified in Exhibit G. If so requested by Owner, and if commercially available, Engineer shall obtain and shall require its Consultants to obtain such additional insurance coverage, different limits, or revised deductibles for such periods of time as requested by Owner, and Exhibit G will be supplemented to incorporate these requirements.

6.05 Suspension and Termination

A. Suspension.

By Owner: Owner may suspend the Project upon seven days written notice to Engineer.

By Engineer: If Engineer's services are substantially delayed through no fault of Engineer, Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement.

B. *Termination.* The obligation to provide further services under this Agreement may be terminated:

1. For cause,

a. By either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

b. By Engineer:

1) upon seven days written notice if Owner demands that Engineer furnish or perform services contrary to Engineer's responsibilities as a licensed professional; or

2) upon seven days written notice if the Engineer's services for the Project are delayed or suspended for more than 90 days for reasons beyond Engineer's control.

3) Engineer shall have no liability to Owner on account of such termination.

c. Notwithstanding the foregoing, this Agreement will not terminate under paragraph 6.05.B.1.a if the party receiving such notice begins, within seven days of receipt of such notice, to correct its substantial failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt thereof; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.

2. For convenience,

a. By Owner effective upon Engineer's receipt of notice from Owner.

C. *Effective Date of Termination.* The terminating party under paragraph 6.05.B may set the effective date of termination at a time up to 30 days later than otherwise provided to allow Engineer to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files. Upon payment due for services performed prior to the effective date of termination,

Engineer shall deliver or otherwise make available to Owner all documents, data, drawings, specifications, reports, estimates, summaries, notes, and other information and materials as may have been produced or accumulated by Engineer in performing this Agreement.

D. Payments Upon Termination.

1. In the event of any termination under paragraph 6.05, Engineer will be entitled to invoice Owner and to receive full payment for all services performed or furnished and all Reimbursable Expenses incurred through the effective date of termination. Upon making such payment, Owner shall have the limited right to the use of Documents, at Owner's sole risk, subject to the provisions of paragraph 6.03.E.

2. In the event of termination by Owner for convenience or by Engineer for cause, Engineer shall be entitled, in addition to invoicing for those items identified in paragraph 6.05.D.1, to invoice Owner and to payment of a reasonable amount for services and expenses directly attributable to termination, both before and after the effective date of termination, such as reassignment of personnel, costs of terminating contracts with Engineer's Consultants, and other related close-out costs, using methods and rates for Additional Services as set forth in Exhibit C.

6.06 Controlling Law

A. This Agreement is to be governed by the law of the state in which the Project is located.

6.07 Successors, Assigns, and Beneficiaries

A. Owner and Engineer each is hereby bound and the partners, successors, executors, administrators and legal representatives of Owner and Engineer (and to the extent permitted by paragraph 6.07.B the assigns of Owner and Engineer) are hereby bound to the other party to this Agreement and to the partners, successors, executors, administrators and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement.

B. Neither Owner nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, claims arising out of this Agreement or moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no

assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

C. Unless expressly provided otherwise in this Agreement:

1. Nothing in this Agreement shall be construed to create, impose, or give rise to any duty owed by Owner or Engineer to any Contractor, Contractor's subcontractor, supplier, other individual or entity, or to any surety for or employee of any of them.

2. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Owner and Engineer and not for the benefit of any other party.

3. Owner agrees that the substance of the provisions of this paragraph 6.07.C shall appear in the Contract Documents.

6.08 Dispute Resolution

A. Owner and Engineer agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice prior to invoking the procedures of Exhibit H or other provisions of this Agreement, or exercising their rights under law.

B. If the parties fail to resolve a dispute through negotiation under paragraph 6.08.A, then either or both may invoke the procedures of Exhibit H. If Exhibit H is not included, or if no dispute resolution method is specified in Exhibit H, then the parties may exercise their rights under law.

6.09 Environmental Condition of Site

A. Owner has disclosed to Engineer in writing the existence of all known and suspected Asbestos, PCBs, Petroleum, Hazardous Waste, Radioactive Material, hazardous substances, and other Constituents of Concern located at or near the Site, including type, quantity, and location.

B. Owner represents to Engineer that to the best of its knowledge no Constituents of Concern, other than those disclosed in writing to Engineer, exist at the Site.

C. If Engineer encounters an undisclosed Constituent of Concern, then Engineer shall notify (1) Owner and (2) appropriate governmental officials if Engineer reasonably concludes that doing so is required by applicable Laws or Regulations.

D. It is acknowledged by both parties that Engineer's scope of services does not include any services related to Constituents of Concern. If Engineer or any other party encounters an undisclosed Constituent of Concern, or if investigative or remedial action, or other professional services, are necessary with respect to disclosed or undisclosed Constituents of Concern, then Engineer may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until Owner: (1) retains appropriate specialist consultant(s) or contractor(s) to identify and, as appropriate, abate, remediate, or remove the Constituents of Concern; and (2) warrants that the Site is in full compliance with applicable Laws and Regulations.

E. If the presence at the Site of undisclosed Constituents of Concern adversely affects the performance of Engineer's services under this Agreement, then the Engineer shall have the option of (1) accepting an equitable adjustment in its compensation or in the time of completion, or both; or (2) terminating this Agreement for cause on 30 days notice.

F. Owner acknowledges that Engineer is performing professional services for Owner and that Engineer is not and shall not be required to become an "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, which are or may be encountered at or near the Site in connection with Engineer's activities under this Agreement.

6.10 Indemnification and Mutual Waiver

A. *Indemnification by Engineer.* To the fullest extent permitted by law, Engineer shall indemnify and hold harmless Owner, and Owner's officers, directors, partners, agents, consultants, and employees from and against any and all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to the Project, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Engineer or Engineer's officers, directors, partners, employees, or Consultants. The indemnification provision of the preceding sentence is subject to and limited by the provisions agreed to by Owner and Engineer in Exhibit I, "Allocation of Risks," if any.

B. *Indemnification by Owner.* To the fullest extent permitted by law, Owner shall indemnify and hold harmless Engineer, Engineer's officers, directors, partners, agents, employees, and Consultants from and against any and all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to the Project, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Owner or Owner's officers, directors, partners, agents, consultants, or employees, or others retained by or under contract to the Owner with respect to this Agreement or to the Project.

C. *Environmental Indemnification.* In addition to the indemnity provided under paragraph 6.10.B of this Agreement, and to the fullest extent permitted by law, Owner shall indemnify and hold harmless Engineer and its officers, directors, partners, agents, employees, and Consultants from and against any and all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals, and all court, arbitration, or other dispute resolution costs) caused by, arising out of, relating to, or resulting from a Constituent of Concern at, on, or under the Site, provided that (i) any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) nothing in this paragraph shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence or willful misconduct.

D. *Percentage Share of Negligence.* To the fullest extent permitted by law, a party's total liability to the other party and anyone claiming by, through, or under the other party for any cost, loss, or damages caused in part by the negligence of the party and in part by the negligence of the other party or any other negligent entity or individual, shall not exceed the percentage share that the party's negligence bears to the total negligence of Owner, Engineer, and all other negligent entities and individuals.

E. *Mutual Waiver.* To the fullest extent permitted by law, Owner and Engineer waive against each other, and the other's employees, officers, directors, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to the Project.

6.11 Miscellaneous Provisions

A. *Notices.* Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, by facsimile, by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

B. *Survival.* All express representations, waivers, indemnifications, and limitations of liability included in this Agreement will survive its completion or termination for any reason.

C. *Severability.* Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Engineer, who agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

D. *Waiver.* A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement. One or more waivers by either party of any provision, term, condition or covenant shall not be constructed as a waiver of a subsequent breach of the same by the other party.

E. *Accrual of Claims.* To the fullest extent permitted by law, all causes of action arising under this Agreement shall be deemed to have accrued, and all statutory periods of limitation shall commence, no later than the date of Substantial Completion.

ARTICLE 7 - DEFINITIONS

7.01 Defined Terms

A. Wherever used in this Agreement (including the Exhibits hereto) terms (including the singular and plural forms) printed with initial capital letters have the meanings indicated in the text above or in the exhibits; in the following provisions; or in the "Standard General Conditions of the Construction Contract," prepared by the Engineers Joint Contract Documents Committee (No. C-700, 2002 Edition):

1. *Additional Services*--The services to be performed for or furnished to Owner by Engineer in accordance with Exhibit A, Part 2, of this Agreement.

2. *Basic Services*--The services to be performed for or furnished to Owner by Engineer in accordance with Exhibit A, Part 1, of this Agreement.

3. *Construction Cost*--The cost to Owner of those portions of the entire Project designed or specified by Engineer. Construction Cost does not include costs of services of Engineer or other design professionals and consultants, cost of land, rights-of-way, or compensation for damages to properties, or Owner's costs for legal, accounting, insurance counseling or auditing services, or interest and financing charges incurred in connection with the Project, or the cost of other services to be provided by others to Owner pursuant to Exhibit B of this Agreement. Construction Cost is one of the items comprising Total Project Costs.

4. *Constituent of Concern*--Any substance, product, waste, or other material of any nature whatsoever (including, but not limited to, Asbestos, Petroleum, Radioactive Material, and PCBs) which is or becomes listed, regulated, or addressed pursuant to [a] the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); [b] the Hazardous Materials Transportation Act, 49 U.S.C. §§1801 et seq.; [c] the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); [d] the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; [e] the Clean Water Act, 33 U.S.C. §§1251 et seq.; [f] the Clean Air Act, 42 U.S.C. §§7401 et seq.; and [g] any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

5. *Consultants*--Individuals or entities having a contract with Engineer to furnish services with respect to this Project as Engineer's independent professional associates, consultants, subcontractors, or vendors.

6. *Documents*--Data, reports, Drawings, Specifications, Record Drawings, and other deliverables, whether in printed or electronic media format, provided or furnished in appropriate phases by Engineer to Owner pursuant to this Agreement.

7. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings are not Drawings as so defined.

8. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

9. *Reimbursable Expenses*--The expenses incurred directly by Engineer in connection with the performing or furnishing of Basic and Additional Services for the Project.

10. *Resident Project Representative*--The authorized representative of Engineer, if any, assigned to assist Engineer at the Site during the Construction Phase. The Resident Project Representative will be Engineer's agent or employee and under Engineer's supervision. As used herein, the term Resident Project Representative includes any assistants of Resident Project Representative agreed to by Owner. The duties and responsibilities of the Resident Project Representative, if any, are as set forth in Exhibit D.

11. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

12. *Total Project Costs*--The sum of the Construction Cost, allowances for contingencies, and the total costs of services of Engineer or other design professionals and consultants, together with such other Project-related costs that Owner furnishes for inclusion, including but not limited to cost of land, rights-of-way, compensation for damages to properties, Owner's costs for legal, accounting, insurance counseling and auditing services, interest and financing charges incurred in connection with the Project, and the cost of other services to be provided by others to Owner pursuant to Exhibit B of this Agreement.

ARTICLE 8 - EXHIBITS AND SPECIAL PROVISIONS

8.01 Exhibits Included

A. Exhibit A, "Engineer's Services," consisting of 28 pages.

B. Exhibit B, "Owner's Responsibilities," consisting of 2 pages.

C. Exhibit C, "Payments to Engineer for Services and Reimbursable Expenses," consisting of 7 pages.

D. Exhibit D, Reserved

E. Exhibit E, Reserved

F. Exhibit F, Reserved.

G. Exhibit G, "Insurance," consisting of 1 pages.

H. Exhibit H, "Dispute Resolution," consisting of 1 page.

I. Exhibit I, "Allocation of Risks," consisting of 1 page.

J. Exhibit J, Reserved

K. Exhibit K, Reserved

8.02 Total Agreement

A. This Agreement (consisting of pages 1 to 10 inclusive, together with the exhibits identified above) constitutes the entire agreement between Owner and Engineer and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument based on the format of Exhibit K to this Agreement.

8.03 Designated Representatives

A. With the execution of this Agreement, Engineer and Owner shall designate specific individuals to act as Engineer's and Owner's representatives with respect to the services to be performed or furnished by Engineer and responsibilities of Owner under this Agreement. Such individuals shall have authority to transmit instructions, receive information, and render decisions relative to the Project on behalf of each respective party.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the Effective Date of which is indicated on page 1.

Owner:

PAPIO-MISSOURI RIVER NATURAL
RESOURCES DISTRICT

By: _____

Title: _____

Date Signed: _____

Address for giving notices:

8901 S. 154th Street

Omaha, NE 68138-3621

Designated Representative (see paragraph 8.03.A):

Steven Otlmans

Title: General Manager

Phone Number: (402) 444-6222

Facsimile Number: (402) 895-6543

E-Mail Address: soltmans@papiornrd.org

Engineer:

HDR ENGINEERING, INC.

By: _____

Title: _____

Date Signed: _____

Engineer License or Certificate No. _____

State of: _____

Address for giving notices:

8404 Indian Hills Drive

Omaha, NE 68114

Designated Representative (see paragraph 8.03.A):

Timothy Crockett, P.E.

Title: Senior Vice President

Phone Number: (402) 399-1257

Facsimile Number: (402)-399-1111

E-Mail Address: tcrocket@hdrinc.com

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT A**, consisting of 28 pages, referred to in and part of
the **Agreement between Owner and Engineer for Professional
Services** dated _____, _____.

Engineer's Services

Article 1 of the Agreement is amended and supplemented to include the following agreement of the parties. Engineer shall provide Basic and Additional Services as set forth below.

PART 1 – BASIC SERVICES

INSERT SCOPE OF SERVICES

INSERT SCHEDULE OF SERVICES

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT B**, consisting of 2 pages, referred to in and part of
the **Agreement between Owner and Engineer for Professional
Services** dated _____, _____.

Owner's Responsibilities

Article 2 of the Agreement is amended and supplemented to include the following agreement of the parties.

B2.01 In addition to other responsibilities of Owner as set forth in this Agreement, Owner shall at its expense:

A. Provide Engineer with all criteria and full information as to Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations; and furnish copies of all design and construction standards which Owner will require to be included in the Drawings and Specifications; and furnish copies of Owner's standard forms, conditions, and related documents for Engineer to include in the Bidding Documents, when applicable.

B. Furnish to Engineer any other available information pertinent to the Project including reports and data relative to previous designs, or investigation at or adjacent to the Site.

C. Following Engineer's assessment of initially-available Project information and data and upon Engineer's request, furnish or otherwise make available such additional Project related information and data as is reasonably required to enable Engineer to complete its Basic and Additional Services. Such additional information or data would generally include the following:

1. Property descriptions.
2. Zoning, deed, and other land use restrictions.
3. Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points.
4. Explorations and tests of subsurface conditions at or contiguous to the Site, drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site, or hydrographic surveys, with appropriate professional interpretation thereof.
5. Environmental assessments, audits, investigations, and impact statements, and other relevant environmental or cultural studies as to the Project, the Site, and adjacent areas.
6. Data or consultations as required for the Project but not otherwise identified in the Agreement or the Exhibits thereto.

D. Give prompt written notice to Engineer whenever Owner observes or otherwise becomes aware of the presence at the Site of any Constituent of Concern, or of any other development that affects the scope or time of performance of Engineer's services, or any defect or nonconformance in Engineer's services, the Work, or in the performance of any Contractor.

E. Authorize Engineer to provide Additional Services as set forth in Part 2 of Exhibit A of the Agreement as required.

F. Arrange for safe access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services under the Agreement.

G. Examine all alternate solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by Engineer (including obtaining advice of an attorney, insurance counselor, and other advisors or consultants as Owner deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.

H. Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by Engineer and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.

I. Provide, as required for the Project:

1. Accounting, bond and financial advisory, independent cost estimating, and insurance counseling services.
2. Legal services with regard to issues pertaining to the Project as Owner requires or deems appropriate, Contractor raises, or Engineer reasonably requests, including but not limited to the review of Contract Documents supplied by Engineer.
3. Such auditing services as Owner requires to ascertain how or for what purpose Contractor has used the moneys paid.
4. Placement and payment for advertisement for Bids in appropriate publications.

J. Advise Engineer of the identity and scope of services of any independent consultants employed by Owner to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructibility review.

K. Furnish to Engineer data as to Owner's anticipated costs for services to be provided by others (including, but not limited to, accounting, bond and financial, independent cost estimating, insurance counseling, and legal advice) for Owner so that Engineer may assist Owner in collating the various cost categories which comprise Total Project Costs.

L. If Owner designates a construction manager or an individual or entity other than, or in addition to, Engineer to represent Owner at the Site, define and set forth as an attachment to this Exhibit B the duties, responsibilities, and limitations of authority of such other party and the relation thereof to the duties, responsibilities, and authority of Engineer.

M. If more than one prime contract is to be awarded for the Work designed or specified by Engineer, designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity and the relation thereof to the duties, responsibilities, and authority of Engineer as an attachment to this Exhibit B that is to be mutually agreed upon and made a part of this Agreement before such services begin.

N. Attend the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job related meetings, and Substantial Completion and final payment inspections.

O. Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of Samples, materials, and equipment required by the Contract Documents, or to evaluate the performance of materials, equipment, and facilities of Owner, prior to their incorporation into the Work with appropriate professional interpretation thereof.

P. Provide Engineer with the findings and reports generated by the entities providing services to Owner pursuant to this paragraph.

Q. Perform or provide the following additional services: _____.

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT C**, consisting of 7 pages, referred to in and part of
the **Agreement between Owner and Engineer for Professional
Services** dated _____, _____.

Payments to Engineer for Services and Reimbursable Expenses

Article 2 of the Agreement is amended and supplemented to include the following agreement of the parties:

ARTICLE 2 -- Owner's Responsibilities

C2.01 Compensation For Basic Services (other than Resident Project Representative and Post-Construction) – Direct Labor Costs Times a Factor Method of Payment

A. Owner shall pay Engineer for Basic Services set forth in Exhibit A, except for services of Engineer's Resident Project Representative and Post-Construction Phase services, if any, as follows:

1. An amount equal to Engineer's Direct Labor Costs times a factor of 3.15 for the services of Engineer's employees engaged on the Project, plus Reimbursable Expenses, provided however, the total due to ENGINEER for such services and for Reimbursable Expenses shall not exceed the amount of \$621,907, unless authorized in writing by Owner.
2. The fee schedule is attached to this Exhibit C as Appendix 1.
3. Engineer's Reimbursable Expenses Schedule is attached to this Exhibit C as Appendix 2.
4. Engineer may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered, but shall not exceed the total compensation amount unless approved in writing by Owner.
5. The total estimated compensation for Engineer's services included in the breakdown by phases as noted in paragraph C2.01.A.3, incorporates all labor, overhead, profit, Reimbursable Expenses, and Engineer's Consultant's charges.
6. The portion of the amounts billed for Engineer's services which are related to services rendered on a Direct Labor Costs times a Factor basis will be billed based on the applicable Direct Labor Costs for the cumulative hours charged to the Project by Engineer's principals and employees multiplied by the above-designated factor, plus Reimbursable Expenses and Engineer's Consultant's charges incurred during the billing period.
7. Direct Labor Costs means salaries and wages paid to employees but does not include payroll related costs or benefits.

C2.02 Compensation For Reimbursable Expenses

A. Owner shall pay Engineer for all Reimbursable Expenses at the rates set forth in Appendix 2 to this Exhibit C.

B. Reimbursable Expenses include the following categories: transportation and subsistence incidental thereto; obtaining bids or proposals from Contractor(s); providing and maintaining field office facilities including furnishings and utilities; toll telephone calls and mobile phone charges; reproduction of reports, Drawings, Specifications, Bidding Documents, and similar Project-related items in addition to those required under Exhibit A, and, if authorized in advance by Owner, overtime work requiring higher than regular rates. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for computer time and the use of other highly specialized equipment.

C. The amounts payable to Engineer for Reimbursable Expenses will be the Project-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to the Project, plus 10%.

C2.03 Other Provisions Concerning Payment

A. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer, plus 10%.

B. Factors. The external Reimbursable Expenses and Engineer's Consultant's factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.

C. Estimated Compensation Amounts

1. Engineer's estimate of the amounts that will become payable for specified services are only estimates for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to Engineer under the Agreement.

2. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to Engineer that a compensation amount thus estimated will be exceeded, Engineer shall give Owner written notice thereof. Promptly thereafter Owner and Engineer shall review the matter of services remaining to be performed and compensation for such services. Owner shall either agree to such compensation exceeding said estimated amount or Owner and Engineer shall agree to a reduction in the remaining services to be rendered by Engineer, so that total compensation for such services will not exceed said estimated amount when such services are completed. If Engineer exceeds the estimated amount before Owner and Engineer have agreed to an increase in the compensation due Engineer or a reduction in the remaining services, the Engineer shall be paid for all services rendered hereunder.

D. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

C2.05 Compensation For Additional Services – Direct Labor Costs Times a Factor Method of Payment

A. Owner shall pay Engineer for Additional Services as follows:

1. *General.* For services of Engineer's employees engaged directly on the Project pursuant to paragraph A2.01 or A2.02 of Exhibit A of the Agreement, except for services as a consultant or witness under paragraph A2.01.A.20, an amount equal to Engineer's Direct Labor Costs times a factor of 3.15, plus related Reimbursable Expenses and Engineer's Consultant's charges, if any.

B. Compensation For Reimbursable Expenses

1. For those Reimbursable Expenses that are not accounted for in the compensation for Basic Services under paragraph C2.01 and are directly related to the provision of Additional Services, Owner shall pay Engineer at the rates set forth in Appendix 1 to this Exhibit C.

2. Reimbursable Expenses include the following categories: transportation and subsistence incidental thereto; obtaining bids or proposals from Contractor(s); providing and maintaining field office facilities including furnishings and utilities; toll telephone calls and mobile phone charges; reproduction of reports, Drawings, Specifications, Bidding Documents, and similar Project-related items in addition to those required under Exhibit A, and, if authorized in advance by Owner, overtime work requiring higher than regular rates. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for computer time and the use of other highly specialized equipment.

3. The amounts payable to Engineer for Reimbursable Expenses, if any, will be the Additional Services-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to such Additional Services, plus 10%.

C. Other Provisions Concerning Payment For Additional Services

1. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer, plus 10%.

2. *Factors.* The external Reimbursable Expenses and Engineer's Consultant's factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.

3. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

INSERT DETAILED FEE ESTIMATE

This is **Appendix 2 to EXHIBIT C**, consisting of 1 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____, _____.

Reimbursable Expenses Schedule

Current agreements for engineering services stipulate that the Reimbursable Expenses are subject to review and adjustment per Exhibit C. Reimbursable expenses for services performed on the date of the Agreement are:

8"x11" Copies/black and white	\$0.06/page
8"x11" Copies/Color	\$0.75/page
11"x17" Copies/Color	\$1.50/page
Presentation Boards (plot and mount)	\$150.00 each
Mileage	\$0.45/mile
Technology Fee	\$4.10/direct labor hour
Film and film processing	cost
Report Binders with Custom Index Tabs	\$15.00/each

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT D**, consisting of _____ pages, referred to in and part
of the **Agreement between Owner and Engineer for Professional
Services** dated _____, _____.

RESERVED

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT E**, consisting of _____ pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____, _____.

RESERVED

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT F**, consisting of _____ pages, referred to in and part
of the **Agreement between Owner and Engineer for Professional
Services** dated _____, _____.

RESERVED

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT G**, consisting of 1 pages, referred to in and part of
the **Agreement between Owner and Engineer for Professional
Services** dated , .

Insurance

Paragraph 6.05 of the Agreement is amended and supplemented to include the following agreement of the parties.

G6.05 Insurance

A. The limits of liability for the insurance required by the Agreement are as follows:

The ENGINEER shall purchase, and maintain until the expiration of two years after completion of the Project policies of insurance with the following minimum requirements:

- a) Workmen's Compensation and Employers Liability
 - i) Workers' Compensation: statutory minimum
 - ii) Longshore and Harbor Workers' Compensation Act endorsement and Admiralty Law endorsements (required if the work involves maritime operations).
 - iii) Employer's Liability: \$250,000.00 per accident.
- b) Professional malpractice
 - i) \$1,000,000.00 each claim
 - ii) \$2,000,000.00 aggregate
- c) Commercial General Liability – ISO Occurrence Form
 - i) \$1,000,000.00 each occurrence
 - ii) \$2,000,000.00 general aggregate
 - iii) \$2,000,000.00 products – completed operations aggregate
 - iv) \$1,000,000.00 personal & advertising injury
 - v) \$300,000.00 fire damage
 - vi) \$5,000.00 medical expense
- d) Business Auto Liability - Owned, Non-Owned & Hired vehicles \$1,000,000.00 combined single limit
- e) General Provisions:
 - i) All policies shall provide 30 days written notice to the OWNER prior to termination or material change by endorsement in the coverage provided.
 - ii) The OWNER reserves the right to approve the ENGINEER'S insurers.
 - iii) Workers Compensation and Commercial General Liability policies shall be endorsed to provide Waiver of Subrogation in favor of the OWNER.
 - iv) The Commercial General Liability policy shall be endorsed to include the OWNER as Additional Insured (form CG 20 10) and shall be endorsed to have any annual aggregate apply on a per-project basis.

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT H**, consisting of 1 pages, referred to in and part of
the **Agreement between Owner and Engineer for Professional
Services** dated _____, _____.

Dispute Resolution

Paragraph 6.09 of the Agreement is amended and supplemented to include the following agreement of the parties:

H6.09 Dispute Resolution

A. Mediation. Owner and Engineer agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("Disputes") to mediation by [To be determined]. If such mediation is unsuccessful in resolving a Dispute, then (a) the parties may mutually agree to a dispute resolution of their choice, or (b) either party may seek to have the Dispute resolved by a court of competent jurisdiction.

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT I**, consisting of 1 pages, referred to in and part of the
Agreement between Owner and Engineer for Professional Services
dated _____, _____.

Allocation of Risks

Paragraph 6.11 of the Agreement is amended and supplemented to include the following agreement of the parties:

I6.11.B Limitation of Engineer's Liability

1. *Exclusion of Special, Incidental, Indirect, and Consequential Damages.* To the fullest extent permitted by law, and notwithstanding any other provision in the Agreement, consistent with the terms of paragraph 6.11.E the Engineer and Engineer's officers, directors, partners, employees, agents, and Engineer's Consultants, or any of them, shall not be liable to Owner or anyone claiming by, through, or under Owner for any special, incidental, indirect, or consequential damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to any such damages caused by the negligence, professional errors or omissions, strict liability, breach of contract, or warranties, express or implied, of Engineer or Engineer's officers, directors, partners, employees, agents, or Engineer's Consultants, or any of them.

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT J**, consisting of _____ pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated _____, _____.

Reserved

SUGGESTED FORMAT
(for use with E-500, 2002 Edition)

This is **EXHIBIT K**, consisting of ____ pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated ____, ____.

Reserved

**For Papio-Missouri River Natural Resources District
For Preliminary Design of Dam Sites 1 and 3C
Papillion Creek Watershed (Washington and Douglas Counties, NE)**



ENGINEERING PROPOSAL



BACKGROUND AND BASIS OF PROPOSAL

The purpose of this Agreement is to provide professional services to the Papio-Missouri River NRD on the preliminary design of Dam Sites 1 and 3C.

Dam Site 1 is located on Big Papillion Creek in Washington County, located west of County Road 27 approximately 0.7 mi north of U.S. Highway 30. The contributing drainage area at the proposed dam site is approximately 23.3 square miles. The drainage area of Dam Site 1 is primarily agricultural land with minimal residential development.

Dam Site 3C is located approximately 0.4 mi northwest of the intersection of State Highway 36 and 168th Street on the Big Papillion Creek in Douglas County, with the majority of the reservoir pool residing in Washington County. The contributing drainage area at the proposed dam site is approximately 97.5 square miles. The drainage area of Dam Site 3C is primarily agricultural land with minimal rural residential development and concentrated residential development limited to the communities of Kennard and Washington.

The scope of work is segmented into 14 task series:

- Task Series 100 – Project Management
- Task Series 200 – Public Involvement
- Task Series 300 – Agency Coordination
- Task Series 400 – Hydrology/Hydraulics Analyses
- Task Series 500 – Transportation System Evaluation
- Task Series 600 – Utility Evaluation
- Task Series 700 – Environmental Evaluation
- Task Series 800 – Project Economics
- Task Series 900 – Landuse Planning
- Task Series 1000 – Recreation Planning
- Task Series 1100 – Project Funding
- Task Series 1200 – Design Elements
- Task Series 1300 – Project Development Guide
- Task Series 1400 – Report Preparation

The HDR Team proposes to provide the following professional services over an anticipated sixteen (16) – month project period from the time of contract authorization.

TASK SERIES 100 – PROJECT MANAGEMENT

Task Objective: Confirm that Project elements are being completed.

HDR Activities: **Task 110 Project Management.** Conduct general project management tasks. Includes development of project initiation forms including the development of a project guide, monthly invoicing, monthly progress report, project close out activities and other administrative project activities.

Task 120 Coordination Meetings. Coordination meetings will be conducted with the P-MRNRD during the project. An agenda will be prepared prior to the meeting and meeting minutes prepared after the meeting.

Subtask 120.1 Conduct Kick-Off Meeting. Conduct an initial meeting to discuss project details with P-MRNRD. Review project guide and scope of services.

Subtask 120.2 Conduct P-MRNRD Coordination Meetings. Meet with P-MRNRD personnel to review and discuss Project progress. Assume a total of 6 regularly scheduled meetings.

Subtask 120.3 Conduct Board/Subcommittee Meeting Presentation. Conduct 2 presentations to the P-MRNRD Board/Subcommittee to provide the results of the study. A PowerPoint presentation and handouts will be prepared. It is anticipated one presentation will be in October 2006 prior to the late-stage public meeting, and one presentation at project's end in April 2007.

Task Deliverables:

- Project guide
- Monthly invoices and progress reports
- Meetings agenda and minutes
- PowerPoint presentations for P-MRNRD Board/Subcommittee Presentations

Key Understandings:

- The duration of the project is 14 months.
- Meetings will be held at the offices of the P-MRNRD and attended by 3 HDR professionals.
- One (1) kickoff meeting and 6 coordination meetings
- Two (2) P-MRNRD Board/Subcommittee meeting presentations

TASK 200 PUBLIC INVOLVEMENT

Task Objective: Develop and implement a Public Involvement Strategy to encourage participation of landowners, elected officials, concerned citizens, local organizations, financial institutions, potential investors, and the development community.

HDR Activities: **Task 210 Steering Committee.** The HDR Team will create, with P-MRNRD input, and partner with a Steering Committee comprised of representatives of stakeholder groups who will assist in establishing the Public Involvement Strategy. The Steering Committee's focus is to provide guidance throughout the Project. Because many of the concerns are expected to be about specific issues, participants on this committee will likely also participate in the technical analysis tasks specific to their interests. It is also expected that additional publics will participate in these technical analysis tasks.

Subtask 210.1 Steering Committee Formation - A Stakeholder Steering committee will be formed consisting of members that include representation from stakeholder groups such as town council representatives, agricultural interests, County Commissioners, mayors, and planning officials. HDR to initially contact Steering Committee members for participation.

Subtask 210.2 Communication and Meetings – Following formation of the Steering Committee, an initial meeting will be held to clearly define the project scope and goals, as well as the Steering Committee's role in the project. Continuous communication with the Steering Committee will be maintained and

five (5) meetings held to keep all parties informed of the Project status, obtain feedback on Public Involvement Plan (Plan) results, and how the Plan can be improved.

Task 220 Public Involvement Plan – With Steering Committee and P-MRNRD input, HDR will develop a Public Involvement Plan which identifies:

- Means and ways to identify key stakeholders
- Means and ways to identify critical stakeholder issues
- How to solicit public involvement
- Identifies methods used to communicate with public

Subtask 220.1 Draft Public Involvement Plan Develop Draft Public Involvement Plan and review with Steering Committee and P-MRNRD

Subtask 220.2 Final Public Involvement Plan Revise and Finalize Public Involvement Plan.

Task 230 Implementation of Public Involvement Plan – The unique components and means of the Public Involvement Plan for this project will be identified in Task 220. Ongoing plan evaluation and maintenance will occur with this committee to determine if the Plan is effective and, if not, how it could be improved.

Subtask 230.1 Identify Interested and/or Affected Stakeholders. HDR will identify who is interested and/or affected by this Project through the Steering Committee, individual stakeholder meetings, and an initial public meeting.

Subtask 230.1.1 Initial Public Meeting

HDR will prepare presentation materials for the public meeting. Presentation materials include a condensed Project background document (2 pages) and 5 boards. HDR will revise to address review comments from P-MRNRD prior to finalizing. HDR to prepare invitation to public meeting for potentially impacted landowners.

HDR Team members covering the project disciplines will attend the public meeting. It is anticipated that after a Project overview, a workshop with informational stations for each of the key project components staffed by HDR/P-MRNRD personnel will be employed to identify key stakeholders, extent of each stakeholder's desired involvement, and issues relevant to that Project component. This information will be used to develop the public involvement tasks associated with each of those Project components.

Subtask 230.1.2 Individual Stakeholder Interviews Key stakeholders identified by the Steering Committee not participating at the public meeting will be interviewed to determine their issues. Three days (2 days one week, and one day the following week) will be set aside for individual stakeholder meetings by appointment for those not able to participate in Public Meeting, or those requesting additional discussion time. Days for these interviews will be identified in the invitation and appointments can be made via telephone, or sign-up at the public meeting. Appointments will be ½ hour in duration.

Subtask 230.1.3 Public Meeting/Interview Follow-Up Compilation of Public Meeting minutes and stakeholder interview results.

Subtask 230.2 Identify Key Stakeholder Issues. HDR will identify key project issues to be addressed in study through the initial public meeting, individual stakeholder interviews, and through the public involvement activities associated with analysis tasks.

Subtask 230.3 Public Outreach

Subtask 230.3.1 Education and Informational Materials – Based on the stakeholders and issues identified, the HDR Team will develop educational and informational materials for the Project. Materials include four (4) quarterly mailers, one (1) final project brochure, maximum of five (5) display boards for each public meeting, two (2) renderings, and one (1), 10 minute video. Original material will be developed by HDR. P-MRNRD will be responsible for all printing.

Subtask 230.3.2 Project Press Releases – HDR will assist the P-MRNRD in developing and issuing press releases to local news media. These press releases are intended to inform the public of project goals, benefits, and encourage public involvement. Four (4) quarterly press releases are anticipated. Included in these four are two press releases for the initial and late-stage public meetings.

Subtask 230.3.3 Project Website. HDR will host project web site and provide web content for a 2-way communication between the public and the Project Team. The web page will be narrative in format with several graphics. This site will include, at a minimum, the following components:

- Frequently Asked Questions (FAQ)
- Public Involvement Opportunities
- News and Information
- Related Links
- Contact Information

All material will be reviewed with P-MRNRD, and revised per comments received, prior to posting on the web site. The web page content will be modified as the Project progresses. Bi-monthly updates are anticipated.

Subtask 230.4 Late-Stage Public Meeting – A late-stage public meeting will be held to inform the public participants results of the Project, including public participants, input received, issues identified and how addressed, and study results.

HDR will prepare presentation materials for the public meeting. Presentation materials include a condensed results summary (5 pages) and 5 boards. HDR will revise to address review comments from P-MRNRD prior to finalizing. HDR to prepare invitation to public meeting for potentially impacted landowners.

HDR Team members participating in the project will attend the public meeting. HDR will compile Public Meeting minutes.

Task Deliverables:

- Steering Committee Membership Directory
- Draft and Final Public Involvement Plan
- Presentation Materials (5-boards, handouts, and PowerPoint Presentation) for 2 meetings.
- Invitation to public meetings
- Initial and Late Stage Meeting Minutes
- Project Communication Materials (monthly newsletters, etc.)

- Project web page and monthly updates

Key Understandings:

- The public meetings will be attended by representatives from P-MRNRD and 6 representatives from HDR.
- P-MRNRD to supply tract maps and coordinate with Washington County for ownership contacts.
- HDR to prepare invitation to public meeting to those landowners potentially impacted by project. P-MRNRD will prepare copies of invitation, labels and mail invitations.
- HDR will facilitate the public meetings.
- HDR to arrange location for public meetings, preferably near the project site, with the Bennington School identified as the preferred location.. It is assumed no fee for meeting place, P-MRNRD to cover fee if required.
- HDR to compile project mailing list and maintain through duration of project.
- A general presentation will be made at the initial public meeting with workshop informational stations to follow. Comments will be solicited and documented.
- The web site will be hosted by HDR.
- Web page content will be updated bi-monthly.
- P-MRNRD will be responsible for printing and mailing of all project materials and correspondence. (Assumed 5 newsletters).
- Three (3) days will be set aside for stakeholder interviews. Interviews to occur in Washington County and will be attended by 2 HDR professionals.

TASK 300 AGENCY KICKOFF MEETING

Task Objective: Provide appropriate coordination level within the federal and state agencies.

Activities: **Task 310 Agency Coordination.** It is anticipated that the following federal and state resource agencies will be contacted:

Federal agencies

- US Army Corps of Engineers - Regulatory (USACE)
- US Army Corps of Engineers - Floodplain (USACE)
- US Fish and Wildlife Service (USFWS)
- Environmental Protection Agency (EPA)
- Natural Resources Conservation Service (NRCS)

State agencies

- Department of Natural Resources – Dam Safety (DNR)
- Department of Natural Resources – Floodplain (DNR)
- Department of Environmental Quality (NDEQ)
- Game and Parks Commission (G&P)
- State Historic Preservation Officer (SHPO)
- Nebraska Department of Roads (NDOR)

Local agencies

- Metropolitan Area Planning Authority (MAPA)
- Department of Environmental Quality (NDEQ)
- Washington County Planning Commission
- Washington County Road Commission
- Douglas County
- OPPD
- Huntel
- MUD
- Natural gas company(s)

Subtask 310.1 Project Background Document and Kickoff Meeting

Invitation. HDR will prepare a Project background document that provides initial information about the project.

Subtask 310.1.1 Prepare Draft and Final Project Background Document.

HDR will prepare Project background document that provides initial information about the project. This document will include a brief narrative (< 3 pages) describing the project, the natural and human environments, and the anticipated permitting needs, along with project maps and photos of the project site and surrounding area. Previous correspondence from agencies received during the multi-reservoir analysis will be attached for agency's review/update. P-MRNRD will review draft project background documents and provide comments.

Subtask 310.1.2 Prepare Invitation to Kickoff Meeting. HDR will prepare invitation to agency kickoff meeting and field trip.

Task 320 Conduct Agency Kickoff Meeting. An agency kickoff meeting with a site visit will be held to clarify and define agency issues. The purpose of the meeting will be to define agencies level of interest, their role (e.g. statutory), a point-of-contact, and major resource concerns. Individual meetings with specific agencies will be conducted, depending upon the nature of comments expressed by the individual agencies.

Subtask 320.1 Prepare Materials for Agency Meeting

Subtask 320.2 Attend Agency Meeting Agency Kickoff Meeting will be attended by 3 HDR professionals. Kickoff meeting will consist of a two hour meeting at P-MRNRD offices, following by a box-lunch and field trip to the project sites.

Subtask 320.3 Meeting Minutes HDR to prepare meeting minutes from agency kickoff meeting.

Task 330 Follow-up Agency Meetings. HDR will conduct follow-up meetings and telephone calls with key resource agencies not able to participate in the group agency meeting. Three (3) follow-up meetings with individual agencies are anticipated.

Task 390 Draft Report Section. Prepare preliminary and final draft of the agency coordination section of the report.

Subtask 390.1 Prepare Preliminary Draft Report Section. Document agency coordination in a preliminary draft section of the report.

Subtask 390.2 Prepare Final Draft Report Section. Document agency coordination in a final draft section of the report. Incorporate review comments.

Task Deliverables:

- Record of Agency Coordination
- Meeting agenda and minutes
- Summary report of identified agency issues.

Key Understandings:

- The 2004 Multi-Reservoir Report and subsequent documents will serve as the basis for the Project background document.
- Appropriate federal and state resource agencies will be invited to a kickoff meeting. Individual coordination, either via telephone or meetings, may be necessary to follow-up on comments. It is assumed that no more than three additional meetings will be required.
- Agency information meetings will be attended by 3 HDR representatives.
- Two representatives from HDR will conduct follow-up meetings with federal and state agencies.
- Agendas and minutes will be prepared by HDR.
- P-MRNRD to host initial two hour meeting near the project site, with the Bennington School identified as the preferred location, and arrange and cover expenses for logistics, meal, and transportation for site visit.
- Agency meeting anticipated from to occur from 10 a.m. to 5 p.m. on a weekday.

TASK 400 HYDROLOGY/HYDRAULICS ANALYSES**Task Objective:**

Develop hydrologic model for use in evaluating and optimizing dam features for Sites 1 and 3C. Impacts of varying pool levels will be determined. Hydraulic model will be developed to determine impacts on water surface elevations in Big Papillion Creek for each alternative evaluated.

Activities:**Task 410 Data Collection and Evaluation.** Data to be evaluated includes:

- 2004 Multi-Reservoir Report
- 2005 Washington County Comprehensive Development Plan
- Stage I calibrated HEC-HMS hydrologic model used in Multi-Reservoir Analysis
- LiDAR data for Big Papillion Creek watershed
- Topographic mapping for Washington County flown by Horizons in Fall 2005
- Regulatory HEC-2 models for Big Papillion Creek to confluence with Little Papillion Creek

Subtask 410.1 Conduct Field Reconnaissance. Conduct a site reconnaissance of the study area. Specific areas to be observed within the Big Papillion Creek Watershed include: the proposed Dam Sites 1 and 3C and pool areas, potential water quality basins, Big Papillion Creek from face of Dam Site 3C to confluence of Little Papillion Creek with Big Papillion Creek and major bridges. Prepare a field reconnaissance report summarizing the findings of the field reconnaissance.

Subtask 410.2 Develop Stage-Storage Data. Stage-area curves will be developed for Site 1 and 3C from the updated LiDAR data.

Task 420 Hydrologic Model Development. HEC-HMS will be used to route design hydrographs through the proposed reservoirs. The calibrated model prepared during the Multi-Reservoir Analysis will serve as the basis for model development. The principal spillway hydrograph, auxiliary spillway hydrograph, and freeboard hydrographs will be determined per NRCS Technical Release No. 60 (TR-60) for high hazard structures. In addition, 10-, 50-, 100-, and 500-yr hydrographs will be defined.

Key hydrologic parameters such as land use and percent impervious areas will be updated to future conditions that correspond to anticipated future development conditions and coordinated with the conceptual land use plan for the reservoirs.

Three storm-centerings will be used in the hydrologic analysis. For use in the flood control benefits analysis, with and without project conditions will be simulated for the 10-, 50-, 100-, and 500-yr events.

Task 430 Dam Sizing/Pool Alternatives Alternatives for normal and flood pool levels, top of dam, and associated dam features to accomplish those levels will be evaluated.

Subtask 430.1 Develop Impact Curves The 2005 Washington County topographic mapping will be used to develop stage-impact curves. Starting with the elevation of first infrastructure impacts, a compilation of infrastructure impacts at 2 ft elevation intervals will be developed for each site. Unit values for features impacted (agricultural land, residences, farmsteads, public infrastructure, UPRR, and commercial properties) will be developed to use in weighting the impacts.

Subtask 430.2 Define Alternatives of 1 and 3C Pools Impact curves will be used to develop five (5) unique alternatives of normal and flood pool elevations, and top of dam elevations for sites 1 and 3C. Sites 1 and 3C will be evaluated as an integral system in the hydrologic modeling based on their interdependence.

Subtask 430.3 Define Dam Features for Alternatives Principal and Auxiliary spillway configurations will be developed to achieve pool elevations established by the alternatives developed in Subtask 430.2. To achieve these pool levels, variations in spillway design, such as labyrinth weirs, two-stage spillways, and gated or mechanical spillways will be investigated. Rating curves for principal and auxiliary spillways will be developed for used in reservoir routing.

Subtask 430.4 Perform Reservoir Routing HEC-HMS model will be used to route hydrographs through Sites 1 and 3C for each of the five alternatives. Top of dam elevations will be established through these routings based on TR-60 criteria.

Subtask 430.5 Evaluate Impacts Infrastructure impacts for each design hydrograph will be determined for each alternative. Potential mitigation measures for impacted infrastructure (levees, relocations, etc.) will be investigated.

Task 440 Hydraulic Model Development. As part of Stage I of the Papillion Creek Watershed Master Plan, the three regulatory Flood Insurance Study hydraulic models for Big Papillion Creek were combined and imported into a single HEC-RAS hydraulic model. This combined HEC-RAS model of Big Papillion Creek extends from just downstream of US Highway 36 (approximately 3,000 ft downstream of proposed Dam Site 3C) to its mouth. The model extent used in this analysis will be from US Highway 36 to the confluence with Little Papillion Creek. The downstream boundary conditions of the model will be the rating curve for the cross section at the confluence.

Subtask 440.1 Debug HEC-RAS Model. The FIS model conversion to HEC-RAS resulted in water surface elevation differences of greater than 2 feet at several locations, specifically at the L Street Bridge, Union Pacific Railroad Bridge, and the Interstate 80 Bridge. Bridge modeling approaches in the HEC-RAS model will be modified to reduce WSEL variances between the two models' results to less than 2 ft from the Little Papillion Creek confluence to US Highway 36. No additional topographic or bridge survey data will be conducted. In addition, new or modified bridge structure information within the reach will not be incorporated into the base model.

Subtask 440.2 Baseline Hydraulic Model. Run baseline hydraulic model to establish water surface elevations predicted by FIS model hydrology. Model attributes such as Manning's "n" values and ineffective flow areas from the FIS model will not be modified.

Subtask 440.3 Future Hydraulic Model. Define water surface elevations for the, 10-, 50- and 100-year storm events for "with" and "without project conditions". Peak flow values for future conditions will be used to update the Baseline Hydraulic Model. Future land use conditions within the basin and the downstream storm centering will be used in developing the peak flows for both the with and without project conditions as described in Task 420 Hydrologic Model Development. Model attributes such as Manning's "n" values and ineffective flow areas from the FIS model will not be modified.

Subtask 440.4 Map Flood Extents. Define future flooding extents and depth of flooding for storm events modeled for both with and without project conditions. With project conditions will be limited to two Dam Site 3C reservoir outflows. Predicted water surface elevations will be plotted on Douglas County LiDAR data to define inundation limits.

Task 450 Land Acquisition Alternatives Identify land acquisition alternatives (fee title/easement to 100-yr, 500-yr, auxiliary spillway elevation, or top of dam elevation) and define risks and pool/land costs for each land acquisition alternatives.

Task 460 Reservoir Sustainability Regional basin yield and evaporation values will be used to assess sustainability of the alternatives. Sediment storage provided by each alternative will also be evaluated.

Task 470 Water Quality Basins. Potential locations for water quality basins upstream of each reservoir will be identified and screened. Potential sites will be assessed based on sediment storage provided, residence time for water quality enhancement, portion of watershed afforded treatment by the site, and compatibility with surrounding infrastructure and land use. Analysis of potential water quality basins will use the same framework of impact constraints as Dam Sites 1 and 3C.

Subtask 470.1 Locate Potential Water Quality Sites. Potential locations for water quality basins upstream of each reservoir will be identified.

Subtask 470.2 Develop Stage-Storage Data. Stage-area curves will be developed for each water quality basin from the updated LiDAR data.

Subtask 470.3 Select Preferred Water Quality Sites. Select water quality sites for future analysis.

Subtask 470.4 Size Water Quality Basin. Size, locate alignments of principal and auxiliary spillways. Develop rating curves for principal and auxiliary spillways.

Task 490 Draft Report Section. Prepare preliminary and final draft of the hydrologic/hydraulic section of the report.

Subtask 490.1 Prepare Preliminary Draft Report Section. Document analysis in a preliminary draft hydrologic/hydraulic section of the report.

Subtask 490.2 Prepare Final Draft Report Section. Document analysis in a final draft hydrologic/hydraulic section of the report. Incorporate review comments.

Task Deliverables:

- Field Reconnaissance Draft Report
- Preliminary and Final Draft of the Hydrologic/Hydraulic Section of the Report
- Flood inundation maps for use in Economic Analyses

Key Understandings:

- Assumed number of Dam Site 1 and 3C pool alternatives evaluated is five (5)
- Assumed number of water quality basins investigated for Dam Site 3C is four (4), and for Dam Site 1 is two (2)
- Hydraulic model study area is defined from Dam Site 3C outlet to confluence of Little and Big Papillion Creeks.
- Three storm centerings will be used in hydrologic analyses
- No new topographic or bridge data will be incorporated into HEC-RAS hydraulic model
- Maximum variance between FIS and HEC-RAS water surface elevations model for the baseline model will be 2 ft.
- Regional basin yield and evaporation rates will be used in the sustainability analysis; no operations model will be developed for the reservoirs.
- Regional sediment yield and capture data will be used in the sedimentation analyses.
- Assume one day field reconnaissance

TASK 500 TRANSPORTATION SYSTEM EVALUATION

Task Objective: The purpose of this task is to establish existing traffic patterns, develop future with and without project traffic demands, evaluate pool impacts on transportation infrastructure, and develop mitigation measures to address impacts.

HDR Activities: **Task 510 Data Collection and Evaluation**

Subtask 510.1 Collect and Evaluate Existing Data. Data to be evaluated includes:

- Available as-constructed plans for roadways and structures from Washington County and NDOR.
- Planned bridges reconstruction identified in Washington County 1 and 6-year roadway improvement plan.
- Survey data obtained by P-MRNRD during 2004 Multi-Reservoir Analysis

- Current MAPA traffic data and TransCAD travel demand models
- MAPA Long-Range Transportation Plan
- Douglas County / MAPA Arterial Streets study in NW Douglas County.
- Historic and current traffic count data, as well as the existing and future year demand models.
- Land use and socio-economic data used for the future demand model
- UPRR record drawings for crossing over the Big Papillion Creek near city of Kennard

Subtask 510.2 Conduct Field Survey. Data will be supplemented as needed with field surveys of the project area to determine site conditions and pertinent infrastructure elevations.

Subtask 510.3 Evaluation of Existing Traffic Patterns – Existing traffic demands will be characterized and level of service of existing transportation network determined.

Subtask 520 Coordination Meetings. Initial coordination meeting will be combined with Task Series 300 Agency Kickoff Meeting. One late-stage coordination meeting will be conducted with MAPA, NDOR, Washington and Douglas counties, and UPRR, to discuss project impacts to existing and proposed infrastructure. Intermediate meetings with entities will be held as necessary to address project issues during the project activities. Three (3) such additional meetings are included in this scope of services.

Subtask 520.1 Late Stage Coordination Meeting The late stage coordination meeting will be held to provide project results, impacts to existing and planned infrastructure, and measures proposed to mitigate those impacts. This coordination meeting will be combined with the Utility Group meeting from Task Series 640. HDR to prepare materials for meeting. Two (2) HDR professionals to attend meeting and compile meeting minutes.

Subtask 520.2 Public Task Meetings Conduct two (2) meetings (initial and final) in workshop format with Transportation Task stakeholder group identified at initial public meeting. Meetings will provide forum for identifying key issues, constraints, and potential solutions to mitigate project impacts.

Task 530 Future Traffic Demand Without Project – Future traffic demands and patterns will be determined for the area without project.

Subtask 530.1 Future Development Without Project. Future development conditions of the area without project will be developed with input from MAPA, Washington and Douglas counties, and coordination with Task Series 900 Land Use Planning of this scope of services.

Subtask 530.2 Future Traffic Demands – Future traffic demands in the area will be determined through travel forecasting based on the future land use conditions without the project.

Task 540 Future Traffic Demand With Project – Future traffic demand and patterns will be determined for the area with project.

Subtask 540.1 Future Development With Project. Future development conditions of the area with project will be developed with input from MAPA,

Washington and Douglas counties, and coordination with Task Series 900 Land Use Planning of this scope of services.

Subtask 540.2 Future Traffic Demands – Future traffic demands in the area will be determined through travel forecasting based on the future land use conditions with the project.

Subtask 540.3 Roadway Infrastructure Impacts – Normal and flood pool impacts on existing and future transportation infrastructure will be determined. Mitigation measures to address these impacts will be developed and evaluated through Task Public Involvement.

Task 550 Traffic Impact Analysis

Subtask 550.1 Evaluate Future Traffic Demand Impacts Traffic demand impacts due to the project will be evaluated using without project conditions as a baseline.

Subtask 550.2 Evaluate Level of Service Impacts Impact of with project traffic demands on level of service function for roadway network will be evaluated.

Task 560 Identify Transportation Infrastructure Needs

Subtask 560.1 Determine Network Improvements Required Determine roadway network improvements necessary to mitigate with project traffic demand impacts.

Subtask 560.2 Determine Project Mitigation Measures Required Assess mitigation measures necessary for roadways impacted by reservoir pools.

Subtask 560.3 Develop Cost Estimates for Infrastructure Needs Cost estimates for improvements/mitigation measures for traffic demand and reservoir pool impacts will be developed.

Task 570 Railroad Impact Analysis. Evaluate impacts to railroad due to project. Develop acceptable mitigation measures with UPRR coordination.

Task 570 Public Task Meetings Conduct two (2) meetings (initial and final) in workshop format with Transportation Task stakeholder group identified at initial public meeting. Meetings will provide forum for identifying key issues, constraints, and potential solutions to mitigate project impacts.

Task 590 Prepare Report Report documenting the Transportation System Evaluation will be prepared.

Subtask 590.1 Prepare Preliminary Draft Report Section. Document analysis in a preliminary draft transportation section of the report.

Subtask 590.2 Prepare Final Draft Report Section. Document analysis in a final draft transportation section of the report. Incorporate review comments.

Task Deliverables:

- Record of Agency Coordination
- Meeting agenda and minutes

- Preliminary and Final Draft of the Transportation System Evaluation Section of the Report

Key Understandings:

- The 2004 Multi-Reservoir Report and subsequent documents will serve as the basis for the Project background.
- Task meetings will be attended by 3 HDR representatives
- Coordination meetings will be attended by 2 HDR representatives.
- Agendas and minutes of meetings will be prepared by HDR.
- Field survey is limited to 20 hours of a 2 man survey crew
- Railroad permit application and fee for right of entry will be coordinated and paid for by P-MRNRD.
- ADT will be basis of traffic analyses; peak hour analyses will not be included.
- Traffic data for local roads will be obtained from Washington County; individual traffic counts will not be obtained as part of this scope of services.
- Task will be coordinated with Task Series 900 Land Use Planning, and Task Series 1000 Recreation Facility Planning.

TASK 600 UTILITY EVALUATION

Task Objective: The purpose of this task is to establish existing utilities in the project area, planned utilities impacting the project area, evaluate pool impacts on existing and future utilities, and develop mitigation measures to address impacts.

Activities: **Task 610 Data Collection and Evaluation.**

Subtask 610.1 Collect and Evaluate Existing Data. Data to be evaluated includes:

- Huntel Communications for phone and telecommunication lines
- Kennard water supply located south and east side of US Highway 30 between Kennard and Blair
- Proposed Kennard sanitary line to be constructed along the same corridor as the water supply line
- OPPD power lines
- High pressure gas lines
- Fiber-optic lines

Subtask 610.2 Confirm Utilities. Revisit utility impacts outlined in the 2004 Multi-Reservoir Report. A letter will be prepared requesting the utilities information of each respective utility within the Project area.

Subtask 610.3 Create Utility Infrastructure Coverages. Create GIS coverages for additional utility information.

Task 620 Utility Impact Analysis Determine the impact of the Project on the existing and future utilities and define mitigation strategies. Future utility infrastructure to support anticipated development in the reservoir areas will be considered through coordination with Task Series 900 Land Use Planning.

Subtask 620.1 Define Existing and Future Impacts. Normal and flood pool elevation will be overlaid with GIS utility coverages to determine impacted utility infrastructure. Consider future utility infrastructure to support anticipated development in the reservoir areas.

Subtask 620.2 Define Alternatives to Mitigate Project Impacts. Alternatives to avoid, minimize, and/or mitigate impacts will be evaluated through close coordination with impacted utility owners.

Task 630 Develop Utility Impact Costs. Cost of relocation/mitigation measures of impacted utilities will be developed.

Task 640 Utility Group Meetings One late stage meeting with utility companies will be held. This meeting will be combined with the Late-Stage Transportation Coordination Meeting described in Task 520.1. Meeting will be conducted to present study results and provide feedback to the utilities regarding their concerns and how they have been addressed.

Task 690 Draft Report Section. Prepare preliminary and final draft of the utility system section of the report.

Subtask 690.1 Prepare Preliminary Draft Report Section. Document analysis in a preliminary draft utility section of the report.

Subtask 690.2 Prepare Final Draft Report Section. Document analysis in a final draft utility section of the report. Incorporate review comments.

Task Deliverables:

- Utility GIS coverage
- Meeting agenda and minutes
- Preliminary and Final Draft of the Utility Section of the Report

Key Understandings:

- Appropriate utility companies will be invited to a group meeting. Individual coordination, either via telephone or meetings, may be necessary. It is assumed that no more than one additional day of meetings will be required.
- Utility meetings will be attended by 2 HDR representatives.
- Two representatives from HDR will conduct follow-up meeting.
- Agendas and minutes of meetings will be prepared by HDR.

TASK 700 ENVIRONMENTAL EVALUATION

Task Objective:

The HDR Team will identify natural and social resource project concerns through review of existing data, agency coordination, and public involvement efforts. For potentially impacted natural and social resources, the HDR team will identify possible avoidance alternatives and minimization efforts.

Activities:

Task 710 Data Collection and Evaluation. Environmental data collected for the project area proposed for Dam Sites 1 and 3C include:

- Database search report obtained from Environmental Data Resources (EDR) on regulated material sites (which includes, but is not limited to: underground storage tanks, leaking underground storage tanks RCRA sites, CERCLA sites, landfills, spills, hazardous material information reporting system (HMIRS), and TSCA sites)
- Permitted water well locations and depths to supplement water rights data from Multi-Reservoir Analysis

- Data on recorded archaeological and historic/architectural sites (coordinated through the Nebraska State Historical Society, State Historic Preservation Office) to supplement data from Multi-Reservoir Analysis
- Data on threatened or endangered species known locations (coordinated through the Nebraska Game and Parks Commission)
- NRCS Conservation Reserve Program sites
- Federal and State owned properties
- Soil survey data
- Surface water quality impaired streams inventory from NDEQ
- Washington and Douglas County Assessor's data on parcel ownership, land value, and improvement values and descriptions in the project area and adjacent to the Big Papillion Creek
- Socio-economic census data (population, employment, racial and income characteristics)
- Agricultural census data (cropping distribution, crop yields, average crop values, and average farm land values) from NRCS.
- Recreation visitation data from comparable facilities
- SHPO file search for Site 3C

Task 720 Cultural Resources Survey. The HDR Team will conduct a Phase I archeological survey of the Site 1 project lands to the extent that landowners will consent to the survey. Site 3C lands will not need to be surveyed as the USACE conducted a survey of Site 3A in its 1985 restudy. The HDR team will analyze the data from the Site 3A study and the data from the Site 1 survey to identify potential significant archeological sites that could affect the feasibility of either of these sites.

Task 730 Threatened and Endangered Species Habitat Study. The HDR Team will survey Site 1 and 3C project lands for threatened and endangered species habitat based on the current list of species from the U. S. Fish and Wildlife Service. This will be done through the use of aerial photography with specific ground verification. The HDR team will review this information to identify potential significant T&E species habitat that could affect the feasibility of either of these sites.

Task 740 Wetlands and Waters of the U.S. Survey. The HDR Team will identify wetlands and jurisdictional waters of the U. S. on Site 1 and 3C project lands. For potential embankment and fill areas, including those constructed for water quality pursuant to Task 470 above and road raise fills, potential wetland impacts and impact limits will be determined with GPS. For the pool areas, HDR will use NWI maps to identify potential wetland impacts. Waters of the U. S. will be identified from USGS maps with specific ground verification. The HDR team will review this information to identify potential wetland and waters of the U.S. impacts that could affect the feasibility of either of these sites.

Task 750 Social and Economic Impact Study. The HDR Team will identify social and economic impacts associated with construction of Sites 1 and 3C. Specific parameters studied would include: relocations in Kennard and Washington, impacted farms (those where loss of land would make the farm economically inefficient), utility impacts, public service impacts (e.g., fire and rescue and schools), tax base impacts, and transportation impacts. Impacts to individuals and local governments would be identified in tabular format for each alternative pool size and land acquisition option. HDR will utilize existing data from the U.S. Census and state, county, and local governments for the study.

The HDR team will solicit input from and participation by the public in identifying social and economic concerns. Study results will be coordinated with these same publics. Participating public will be identified during the initial public meeting(s) discussed in Task 230 Implementation of Public Involvement Plan in this scope.

Task 760 Flood Control Alternatives Analyses Potential flood control alternatives to Dam Sites 1 and 3C will be evaluated and screened based on ability to meet flood control objectives and cost feasibility.

Task 760.1 Multiple Small Detention Cells The use of multiple smaller flood control detention basins throughout the basin will be evaluated. A standard relationship between drainage basin size and detention cell size to provide flood control for the 100-yr event will be developed and used to determine the required number of cells. Detailed siting of detention cell locations are beyond the scope of this project. Uniform cost assumptions including structure and land acquisition will be assumed in the cost analyses.

Task 760.2 Flood Conveyance Improvements Channel/levee improvements to Big Papillion Creek will be evaluated. HEC-RAS hydraulic model of Big Papillion Creek developed in Task Series 400 will be used to determine necessary improvements based on fully developed future conditions of the watershed. The HEC-HMS model of the basin will be used to determine impacts of conveyance improvements on timing of peak flows in lower basin. Uniform assumptions for construction and land acquisition costs will be used in the cost analyses.

Task 760.3 Floodplain Acquisition Acquisition of flood prone areas will also be evaluated. Required acquisitions will be determined for those areas inundated during the 100-yr event based on fully developed future conditions of the watershed. Inundation limits will be determined using HEC-RAS hydraulic model and the future conditions HEC-HMS hydrologic model. Uniform land value assumptions will be used in the cost analyses.

Task 770 Cumulative Effects Study. Cumulative effects of environmental and social resource concerns of the project will be assessed in relation to other past, present and reasonably foreseeable projects within the study area of the project. Most of the cumulative effects analysis was accomplished by HDR during the Section 404 permit review process for Dam Site 13, so only a minor update of the cumulative effects will be required. Specifically, the amount of stream channel impacted by each project will be determined and added to the total of stream loss determined for the Site 13 permit. Also, any stream loss due to other actions since completion of the Site 13 analysis will also be determined and included in the analysis.

Task 790 Draft Report Section. Prepare preliminary and final draft of the environmental evaluation section of the report.

Subtask 790.1 Prepare Preliminary Draft Report Section. Document analysis in a preliminary environmental evaluation section of the report.

Subtask 790.2 Prepare Final Draft Report Section. Document analysis in a final draft environmental evaluation section of the report. Incorporate review comments.

Task Deliverables:

- Preliminary and Final Draft of the Environmental Evaluation Section of the Report

Key Understandings:

- File Search on Site 3C to be conducted by SHPO. Assume maximum of \$10,000 for search.
- Right of entry with landowners to conduct cultural resources, habitat, and wetland surveys will be coordinated by P-MRNRD.
- Dam Site 13 Cumulative Effects analysis will serve as baseline for this study
- Public involvement for this task will be limited to the Initial and Late-Stage public meetings under Task Series 200.

TASK 800 PROJECT ECONOMICS**Task Objective:**

This task is intended to comprehensively and objectively assess the economic viability of constructing impoundments at Dam Sites 1 and 3c along the main stem of the Papillion Creek watershed. Project benefits will focus on flood control, recreation, and property value impacts.

Activities:

Task 810 Data Collection and Evaluation. Economic data collected for the project area proposed for Dam Sites 1 and 3C include:

- Inventory of impacted properties and enterprises (aerial images, site visits, InfoUSA data).
- Structure and improvement values (from County Assessor and realtors)
- Estimated value of contents
- Stage damage curves (USACE and NRDF)
- County and State agricultural statistics from NASS
- Cropland acres by crop either from aerials or other database
- Inventory of farmsteads and major improvements
- Future land use data for the floodplain
- Recreation visitation estimates from the Nebraska Department of Game and Parks, Federal sources (Bureau of Reclamation, Forrest Service, or Fish and Wildlife Service), and current literature.
- Local population growth estimates for MAPA.
- 1985 USACE Economic evaluation
- Project cost estimates including direct expenditures as well as rehab and replacements and annual O&M.

Task 820 Benefit Calculation. Existing and future conditions will be considered; per acre coefficients will be developed for each benefit category including:

- Urban and rural residential structures and improvements
- Commercial and other non-residential properties
- Cropland and farm improvements
- Public facilities including roads and bridges
- Recreation (small boating, fishing, windsurfing, swimming, bicycling, jogging, and passive forms of recreation such as birdwatching)

Subtask 820.1 Flood Control Benefits. A modified USACE approach for estimating flood control benefits will be used. Benefits will be based on residential and commercial structures; public facilities such as roads and bridge

structures; and agricultural lands. Modifications to the level of data collection and some simplifying assumptions will be made to reduce the cost of this task. These modifications involve conducting more of the effort from aerials photos and existing data bases rather than developing new primary data. Results of hydraulic modeling and flood inundation mapping performed in Task Series 400 will be used in benefit analysis.

Flood control benefits for future floodplain land use conditions will be determined using a “per acre” metric for planned land use in the floodplain based on master plans for the area.

Subtask 820.2 Recreation Benefits. Recreation benefits will be determined based on “benefit-transfer” approach developed by the Bureau of Reclamation. This method uses empirical data and associated statistics from similar sites and applies them to the site at hand. Unit day values will be obtained from local sources such as Nebraska Game and Parks Commission, and federal sources such as USACE, BOR, FWS, and Forest Service.

Subtask 820.3 Other Benefits. Qualitative assessments for other benefits such as water quality, property value increases, and transportation and utility improvements due to the project will be developed

Task 890 Draft Report Section. Prepare preliminary and final draft of the economic evaluation section of the report.

Subtask 890.1 Prepare Preliminary Draft Report Section Document analysis in a preliminary economic evaluation section of the report.

Subtask 890.2 Prepare Final Draft Report Section. Document analysis in a final draft environmental evaluation section of the report. Incorporate review comments.

Task Deliverables:

- Preliminary Draft and Final Draft Economic Evaluation Section of the Report

Key Understandings:

- 100-yr project period assumed for economic analysis.
- Flood control benefits will be based on results of Hydrology/Hydraulic Evaluation results for two Dam Site 3C outflow alternatives.
- Flood control benefits determined for reach from confluence with Little Papillion Creek and Dam Site 3C.
- Benefits for years between future and current condition will be linearly interpolated; benefits over time will be discounted to present value using a discount rate of 3 percent and at the federal discount rate of 5.125 percent. Annual equivalent benefit estimates will be derived by amortizing the total present value benefits over the project time horizon.
- A Monte Carlo framework similar to that used in HED-FDA will be used to test the impact on the most sensitive of the variables.
- Benefit transfer approach developed by the Bureau of Reclamation will be used to estimate recreation visitation at the sites.
- Project costs will be allocated over time, discounted to present value, and amortized over the project life.
- A sensitivity analysis will be conducted to determine most critical variables and to address uncertainty.

TASK 900 LAND USE PLANNING

Task Objective: Develop a conceptual land use plan for area surrounding Dam Sites 1 and 3C.

Activities: **Task 910 Data Collection and Evaluation.** Available information on existing and planned land use will be collected from MAPA, Washington and Douglas Counties, and the communities of Kennard and Washington, including:

- Comprehensive Development Plans
- Development ordinances – Zoning and Subdivision
- Zoning and Landuse (existing and future) maps
- Pedestrian/bicycle trail plans/studies
- Preliminary transportation beltway plans
- Pedestrian/bicycle trail plans/studies

Task 920 Initial Task Meeting Meeting to inform the stakeholder group identified at initial public meeting defined in Task 200 on planning mechanisms (nation-wide trends, best practices, etc.) that can be utilized to achieve their goals/visions for the area, and the array of community and regional benefits and expectations that can and should result from this project. Future development scenarios with and without project will be discussed. Goal/Visions of stakeholder group for the ultimate land use around Dam Sites 1 and 3C will be determined. One group meeting is anticipated.

Task 930 Workshops – Two half-day workshops with stakeholders are planned to develop concepts that address individual concerns. These are working meetings intended to be interactive where prepared base maps of the area are marked up to reflect concepts, discussed, and refined.

Task 940 Land Use Plan Development – Results of workshops are incorporated into a conceptual land use plan for the area.

Task 950 Final Task Meeting – Conceptual land use plan will be presented to the task stakeholders.

Task 960 Refinement of Land Use Plan Comments received from the Final Task Public Meeting will be incorporated and conceptual land use plan finalized.

Task 990 Draft Report Section. Prepare preliminary and final draft of the land use planning section of the report.

Subtask 990.1 Prepare Preliminary Draft Report Section. Document analysis in a preliminary draft land use planning section of the report.

Subtask 990.2 Prepare Final Draft Report Section. Document analysis in a final draft land use planning section of the report. Incorporate review comments.

Task Deliverables:

- Draft and Final Land Use Planning Section of the Report

Key Understandings:

- Task Series 900 Land Use Planning Task will be coordinated with Task Series 1000 Recreation Facility Planning and Task Series 500 Transportation System Evaluation
- One Land Use Plan for with project conditions will be developed.
- HDR to arrange location for task meetings and workshops. Bennington School has been identified as preferred location. It is assumed no fee for meeting place, P-MRNRD to cover fee if required.

TASK 1000 RECREATION FACILITY PLANNING

Task Objective: Develop a conceptual recreation facility plan for the areas surrounding Dam Sites 1 and 3C.

Activities: **Task 1010 Data Collection and Evaluation.** Available information on existing and planned land use will be collected from MAPA, Washington and Douglas Counties, and the communities of Kennard and Washington, including:

- Comprehensive Development Plans
- Development ordinances – Zoning and Subdivision
- Zoning and Land use (existing and future) maps
- Pedestrian/bicycle trail plans/studies
- Preliminary transportation beltway plans
- Pedestrian/bicycle trail plans/studies

Task 1020 Initial Task Public Meeting Meeting(s) to inform the stakeholder group identified at initial public meeting defined in Task 200 on recreational facility opportunities (active vs. passive, high vs. low density) that can be utilized to achieve their goals/visions for the area, and the array of community and regional benefits and expectations that can and should result from this project. Goals of stakeholder group to identify goals and a preferred vision for the recreation facilities associated with Dam Sites 1 and 3C. One group meeting is anticipated.

Task 1030 Workshops – Two half-day workshops with stakeholders are planned to develop concepts that address individual concerns. These are working meetings intended to be interactive where prepared base maps of the area are marked up to reflect concepts, discussed, and refined.

Task 1040 Recreation Facility Plan Development – Results of workshops are incorporated into a conceptual land use plan for the area.

Task 1050 Final Task Meeting – Recreation Facility Plans will be presented to the task stakeholders.

Task 1060 Refinement of Recreation Facility Plan Comments received from the Final Task Public Meeting will be incorporated and recreation facility plan finalized.

Task 1090 Draft Report Section. Prepare preliminary and final draft of the recreation facility planning section of the report.

Subtask 1090.1 Prepare Preliminary Draft Report Section. Document analysis in a preliminary draft recreation facility planning section of the report.

Subtask 1090.2 Prepare Final Draft Report Section. Document analysis in a final draft recreation facility planning section of the report. Incorporate review comments.

Task Deliverables:

- Draft and Final Recreation Facility Planning Section of the Report

Key Understandings:

- Task Series 1000 Recreation Facility Plan will be coordinated with Task Series 900 Land Use Planning Task
- Two Recreational Facility plans will be developed for each site. One is for dry-dam conditions. The second plan is for permanent pools at each site.
- HDR to arrange location for task meetings and workshops. Bennington School has been identified as preferred location. It is assumed no fee for meeting place, P-MRNRD to cover fee if required.

TASK 1100 - PROJECT FUNDING

Task Objective: Identify potential funding resources, delineate associated requirements, and develop the most appropriate funding scenarios for each pool alternative.

Activities: **Task 1110 Identify Potential Funding Sources** – Potential funding sources, public and private, will be identified including, but not limited to:

- NRDF grants
- NRCS funding
- EPA water quality grants
- Developer Contributions/Watershed Impact Fees
- Nebraska Game and Parks grants (fisheries, motorboat access, etc.)
- Nebraska Environmental Trust Program
- Tax Levies/Bond financing
- Usage Fees
- Subsidized loans
- Federal earmarks through USDA, EPA, and other agencies

Subtask 1110.1 Landpooling Concept Workshop – One-half day workshop presentation to P-MRNRD on concept of landpooling and potential application to the project. P-MRNRD to provide input on attendees.

Task 1120 Define Funding Process - For each public funding source identified, process and requirements for funding will be defined, including:

- Detail process for obtaining funds, including required project components
- Application process and requirements
- Contractual requirements
- Funding schedule and timeline for application
- Certainty of funding availability

Task 1130 Develop Potential Funding Scenarios. Based on information gathered in Task 1110, potential funding scenarios will be developed for each pool alternative which could include any of the following or a combination thereof:

- Maximum Private Sector Funding: developer contribution/watershed impact fees are maximized

- Maximum grant funding: public federal and state, and private grant funding
- Traditional Public Finance: general obligation bonds (voter approved) become part of the tax levy.
- Source Combination: federal, public, and private funding mechanisms are maximized.

Task 1190 Draft Report Section. Prepare preliminary and final draft of the funding section of the report.

Subtask 1190.1 Prepare Preliminary Draft Report Section. Document analysis in a preliminary draft funding section of the report.

Subtask 1190.2 Prepare Final Draft Report Section. Document analysis in a final draft funding section of the report. Incorporate review comments.

Task Deliverables:

- Preliminary Draft and Final Draft Funding Section of the Report

Key Understandings:

- P-MRNRD to provide meeting facilities for Landpooling Concept Workshop
- David Reinkert with Landpool Inc. will present half-day workshop
- Meetings with development community to discuss potential impact fees are not included in this scope of services.
- Meetings with P-MRNRD to discuss funding strategies will be in combination with P-MRNRD coordination meetings under Task Series 100.

TASK 1200 PRELIMINARY DESIGN ELEMENTS

Task Objective: Develop Preliminary Design of Dam Sites 1 and 3C for preferred alternative.

Activities: **Task 1210 Data Collection and Evaluation.** Data to be evaluated includes:

- Existing subsurface investigations, including 31 soil borings and laboratory material testing, for Sites 1, 2, 3, and 3A were conducted as part of the 1985 USACE Reevaluation Study.
- Geotechnical data on 35 soil borings in the Big Papillion Creek Valley during the design of Newport Landing/Bennington Dam (also known as Dam Site 6).
- Available geotechnical data from Nebraska Highway 36 and US Highway 30 structures in the project area
- Survey data from P-MRNRD
- Existing GIS mapping including aerials, topographic, parcels

Subtask 1210.1 Field Reconnaissance. Conduct a site reconnaissance of the two structure sites. Prepare a field reconnaissance report summarizing the findings of the field reconnaissance.

Task 1220 Alternative Screening. The five system alternatives for Dam Site 1 and 3C will be screened based on flood control, project costs, project benefits, infrastructure impacts, environmental impacts, compatibility with land use and recreation planning, and project funding. Recommended configuration and features of Dam Sites 1 and 3C will be determined.

Task 1230 Survey and Mapping. LiDAR topographic mapping along with 2-ft contour interval is currently scheduled to be obtained by MAPA for the

Papillion Creek Watershed located in Washington County in the Fall of 2005. This “bare-earth” dataset will be used for the preliminary design of Dam Sites 1 and 3C.

Subtask 1230.1 Create Base Map. Create base map of the project study area in GIS. Supplement missing information with information from other sources and tasks associated with this scope of work.

Subtask 1230.2 Supplement Topographic Survey. LiDAR topography will be supplemented as necessary with field survey for existing infrastructure, such as roadway and railroad structures or where additional data is required for the preliminary design efforts.

Subtask 1230.3 Update and Maintenance of Base Map. As additional data becomes available, GIS will be updated.

Task 1240 Geotechnical Evaluation.

Subtask 1240.1 Settlement Analyses for Embankment and Outlet Works Design. Settlement analysis of embankment will be conducted to determine overbuild requirements and special considerations necessary for the dam outlet works.

Subtask 1240.2 Seepage Analyses for Embankment and Foundation Design. Seepage analysis will be conducted to determine seepage cutoff and seepage blanket design requirements for each embankment.

Subtask 1240.3 Stability Analyses Embankment slopes design to determine required fill slopes for stability. Options to reduce embankment footprint on channels will also be evaluated.

Subtask 1240.4 Typical Sections Typical dam sections along principal and auxiliary spillways and profile along tops of dams will be developed.

Task 1250 Civil/Drawing Production - Develop preliminary civil design of dam sites and water quality basins.

Subtask 1250.1 Dam Embankment – Preliminary plans of dam site will be prepared.

Subtask 1250.2 Principal Spillway Design – Preliminary design of principal spillways and outlets will be completed, including preliminary plan and profile drawings.

Subtask 1250.3 Auxiliary Spillway Design – Preliminary design of auxiliary spillways will be completed, including plan and profile drawings.

Subtask 1250.4 Site Civil Design – Preliminary design of recreation site accesses and maintenance roads on the embankments will be developed.

Task 1260 – Relocations. Develop conceptual level design for required infrastructure relocations, including those in Kennard and Washington. Design level limited to that necessary to establish relocation costs.

Task 1270 – Structural Conceptual design of structural and mechanical features of principal and auxiliary spillways and appurtenances will be developed. Design level limited to that necessary to establish construction costs.

Task 1280 – Cost Estimates. Conceptual level cost opinions for all five (5) of the alternatives will be prepared in support of the Alternative Screening process. A detailed cost opinion will be prepared for the selected alternative. Included in the cost estimate for the selected alternative will be dam construction costs, land acquisition costs, and infrastructure relocation costs.

Task 1290 Draft Report Section. Prepare preliminary and final draft of the design and construction elements section of the report.

Subtask 1290.1 Prepare Preliminary Draft Report Section. Document analysis in a preliminary draft design elements section of the report.

Subtask 1290.2 Prepare Final Draft Report Section. Document analysis in a final draft design elements. section of the report. Incorporate review comments.

Task Deliverables:

- Preliminary Draft and Final Draft Design Section of the Report
- Conceptual Design Drawings
- Cost Estimates for each of the three alternatives.

Key Understandings:

- It is assumed that topographic mapping for Washington County will be available by mid February 2006.
- Based on the availability of geotechnical data in the project area, additional soil borings are not anticipated as part of this preliminary design effort. Engineering analysis of the embankment and spillways will be determined based on the 1985 Reevaluation and Dam Site 6 geotechnical data.
- Laboratory material testing of soil properties is not required because no additional geotechnical information is being obtained.
- Preliminary design will be for one (1) recommended alternative
- Conceptual cost opinions will be developed for all five alternatives for use in the screening process. Detailed cost opinion will be developed for selected alternative.
- Field survey is limited to 20 hours of a 2 man survey crew

TASK 1300 PROJECT DEVELOPMENT GUIDE

Objective: Provide a clear, concise project development guide documenting remaining steps and requirements.

Activities: **Task 1310 Design.** The remaining design requirements to be addressed during final design of selected alternative for Dam Sites 1 and 3C will be outlined. Required data collection necessary to complete final design will also be provided. The processes required for approval of selected infrastructure mitigation measures and implementation of the Land Use Plan will be presented based on coordination with impacted utilities and political entities during this study. Finally a preliminary schedule to finalize design and prepare construction documents will be estimated.

Task 1320 Permitting. Through extensive agency coordination and public involvement efforts during this preliminary design effort, an inclusive list of required permits and compliances will be prepared, complete with preliminary schedule and budgetary estimates for preparation of applications and anticipated agency processing time.

Task 1330 Funding. The process for securing the preferred funding scenarios will be summarized with associated requirements, applications, and timelines to assess flow of funds in relation to the activities of other elements, such as land acquisition, to ensure funding is available when it is needed.

Task 1340 Public Involvement. Through coordination with the two stakeholder groups, a Public Involvement Plan will be outlined to maintain project interest and support through the NEPA public hearing process. Resources and materials to accomplish this will also be identified.

Task 1390 Project Development Guide A concise Project Development Guide detailing the remaining steps for project implementation. Projected schedules and budgets for the four key project elements will be presented separately and rolled up into an overall schedule to allow visualization and prioritization of future project activities.

Task Deliverables:

- Project Development Guide

Key Understandings:

- Project Guide will include cost and fee estimates for budgetary purposes.
- Major milestones will be included in Project Development schedule.

TASK 1400 – REPORT PREPARATION

Objective: Prepare documentation of the Project in Report Format.

Activities: **Task 1410 Develop Style Guide.** A text style guide will be prepared by HDR that will establish format and stylistic parameters for written reports to be used for the report and all appendices.

Task 1420 Draft Report Preparation. Draft Report will be compiled.

Subtask 1420.1 Draft Executive Summary. Draft Executive Summary will be prepared.

Subtask 1420.2 Draft Table of Contents. Draft Table of Contents for the report will be developed.

Subtask 1420.3 Draft Report Sections. Draft report sections from each task will be compiled.

Subtask 1420.4 Draft Appendices. The following appendices are proposed:

- A. Hydrologic/Hydraulic Analysis
- B. Transportation Analyses
- C. Utility Analyses
- D. Environmental Analysis
- E. Economic Analyses
- F. Land Use Planning

- G. Recreation Planning
- H. Cost Opinions
- I. Public Involvement
- J. Preliminary Design Drawings

Task 1430 Final Report Preparation. Final Report will be prepared.

Subtask 1430.1 Final Executive Summary. Final Executive Summary will be prepared based on P-MRNRD comments.

Subtask 1430.2 Final Table of Contents. Final Table of Contents will be prepared based on P-MRNRD comments.

Subtask 1430.3 Final Report Sections. Final Report text will be prepared based on P-MRNRD comments.

Subtask 1430.4 Final Report Appendices. Final Report Appendices will be compiled based on P-MRNRD comments.

Task Deliverables:

- Style Guide
- Draft and Final Report.

Key Understandings:

- Report sections developed through each task series will be compiled to comprise final report.
- One (1) electronic copy and one (1) hard copy of Final Report will be provided to P-MRNRD.
- P-MRNRD will be responsible for report reproduction.

ATTACHMENT "A"
PAPILLON MISSOURI RIVER NATURAL RESOURCES DISTRICT
PRELIMINARY DESIGN OF DAM SITES 1 AND 2C
FEE ESTIMATE

[illegible]

ATTACHMENT 3 PAPELON MISSOURI RIVER NATURAL RESOURCES DISTRICT PRELIMINARY DESIGN DAM SITES 1 AND 3C DRAFT GENERAL SCHEDULE, VERSION 4.0

Task	Dec-05	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec-06	Jan	Feb	Mar	Apr
Task 110: Project Management																	
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